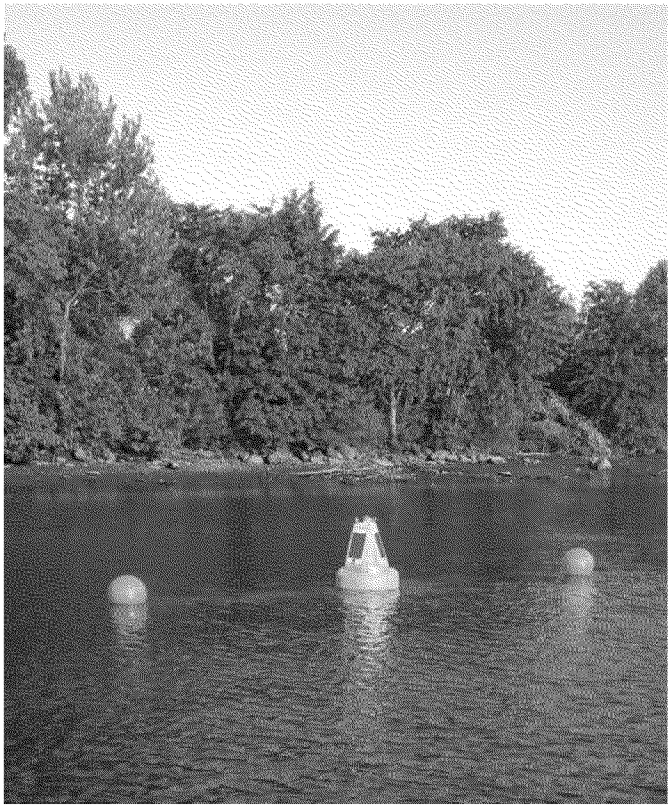
RIVER MILE 10.9 REMOVAL ACTION
WATER QUALITY MONITORING PROGRAM

The River Mile (RM) 10.9 Removal Action dredging and capping operations have the potential to disturb and suspend sediments (resuspension) within the water column. The contaminants found at RM 10.9 adhere to the sediment. Therefore, it is important to control and minimize resuspension so that contaminants do not migrate outside of the Removal Area. For that reason, the water quality monitoring program associated with this Removal Action is focused on determining how much sediment is naturally in the water and then preventing significant increases outside of the removal area. More information concerning the Water Quality Monitoring Program is provided below.



Water Quality Monitoring Buoy

Introduction

The project goal is to reduce the amount of sediment that is suspended and could go downstream and impact other areas of the river. One measure of the amount of suspended sediment in the water is turbidity. Turbidity is measured by an instrument that determines how much light is scattered off the particles in the water column. Turbidity measured this way uses an instrument called a nephelometer with the detector setup to the side of the light beam. More light reaches the detector if there are lots of small particles scattering the source beam than if there are few. The units of turbidity from a calibrated nephelometer are called Nephelometric Turbidity Units (**NTU**). There are instruments that can measure turbidity easily and fast and at all times in the river. This type of instrumentation is being used to provide the turbidity levels surrounding the removal area.

Four stationary buoyed monitoring locations are installed upstream and downstream of the RM 10.9 Removal Area to measure turbidity during dredging and capping operations. The continuous monitoring locations are positioned as follows:

- Fixed Turbidity Buoy #1: Downstream "baseline" location at RM 10.2, approximately 0.5 miles (2,650 ft) downstream of the Removal Area's southern perimeter boundary
- Fixed Turbidity Buoy #2: Downstream location approximately 200 ft downstream of the RM 10.9 Removal Area's southern perimeter boundary
- Fixed Turbidity Buoy #3: Upstream location approximately 200 ft upstream of the RM 10.9 Removal Area's northern perimeter boundary
- Fixed Turbidity Buoy #4: Upstream "baseline" location at RM 11.7, approximately 0.5 miles (2,650 ft) upstream of the Removal Area's northern perimeter boundary
- Mobile Turbidity Buoy #5: This mobile operational buoy will be moved as needed to monitor turbidity within

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the Removal Area outside of the resuspension management system, silt curtains.

At each buoy location, the turbidity monitors are placed at the approximate midpoint of the water column. The monitoring sites adjacent to the Removal Area (Buoys #2 and #3) are intended to reflect conditions due to the dredging and capping operations. The fifth mobile monitoring location (Buoy #5) is intended to provide operational early detection of elevated turbidity levels and allow the project to make adjustments such that the trigger level is not exceeded.

Turbidity monitoring is performed real-time at the four buoy locations on 15-minute intervals. The following action levels will be implemented:

- If the turbidity "**trigger level**," of four consecutive 15-minute readings (i.e., 60 minutes) at turbidity buoy #2 or #3 is 30 NTUs above ambient conditions, the dredging/capping operator will be notified and directed to evaluate dredging/capping Best Management Practices.
- If the "**action level**" of four consecutive 15-minute readings of 30 NTUs above ambient conditions and a value greater than 50 NTUs occurs, dredging/capping will be suspended after a brief evaluation of site conditions. Dredging/capping will resume when the turbidity level returns to below the 'trigger level' of 30 NTUs above ambient conditions or dredging is determined not to be the source.
- If dredging is suspended, water column samples will be collected at designated buoy locations to analyze for target chemicals.

Event Response Process

If a visible plume or sheen emanating from the silt curtain around the active dredging/capping area is detected or an exceedance of one of USEPA's actionable criteria is recorded continuously for 1 hour, then the response processes described below will be initiated.

Trigger Level Exceedance

The dredging/capping operator will be notified of the event and the project's Best Management Practices will be evaluated. In addition, manual measurements of turbidity will be collected outside the silt curtain and in the vicinity of the dredging/capping operations to determine if these activities are the source of the exceedance.

Should the cause of the increase be attributed to the Removal Action activities, then the project Best Management Practices will be adjusted accordingly. Dredging/capping activities will not be stopped as a result of this exceedance.

The construction manager (or delegate) will oversee the process of investigation and determination of the appropriate mitigation and other corrective measures in consultation with USEPA personnel and other relevant on-site personnel.

Details of the increased turbidity above the trigger value will be documented and will include, but not be limited to, sampling location, time, date, tidal movements, meteorological conditions, location of dredging operations, and corrective and other measures taken in response to the event. Where relevant, the details of other in-river activities unrelated to RM 10.9 Removal Action will be noted.

Action Level Exceedance

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If the measured turbidity exceeds the trigger level AND turbidity at the compliance buoy exceeds 50 NTU, then dredging will be stopped and the source of the exceedances will be investigated. In addition, water samples will be collected for possible analysis. If the construction manager (or delegate) who oversees the process of investigation determines that dredging or capping is the source of the exceedance, corrective measures will be taken and the water samples will be analyzed for chemicals of concern. EPA will be notified and reports will be submitted.

Dredging/capping activities will resume only when:

1) It is established that all dredging/capping plant and equipment is operating in a proper and efficient manner,
2) Appropriate corrective measures have been implemented, or
3) The exceedance is determined to not be attributed to Removal Action activities.

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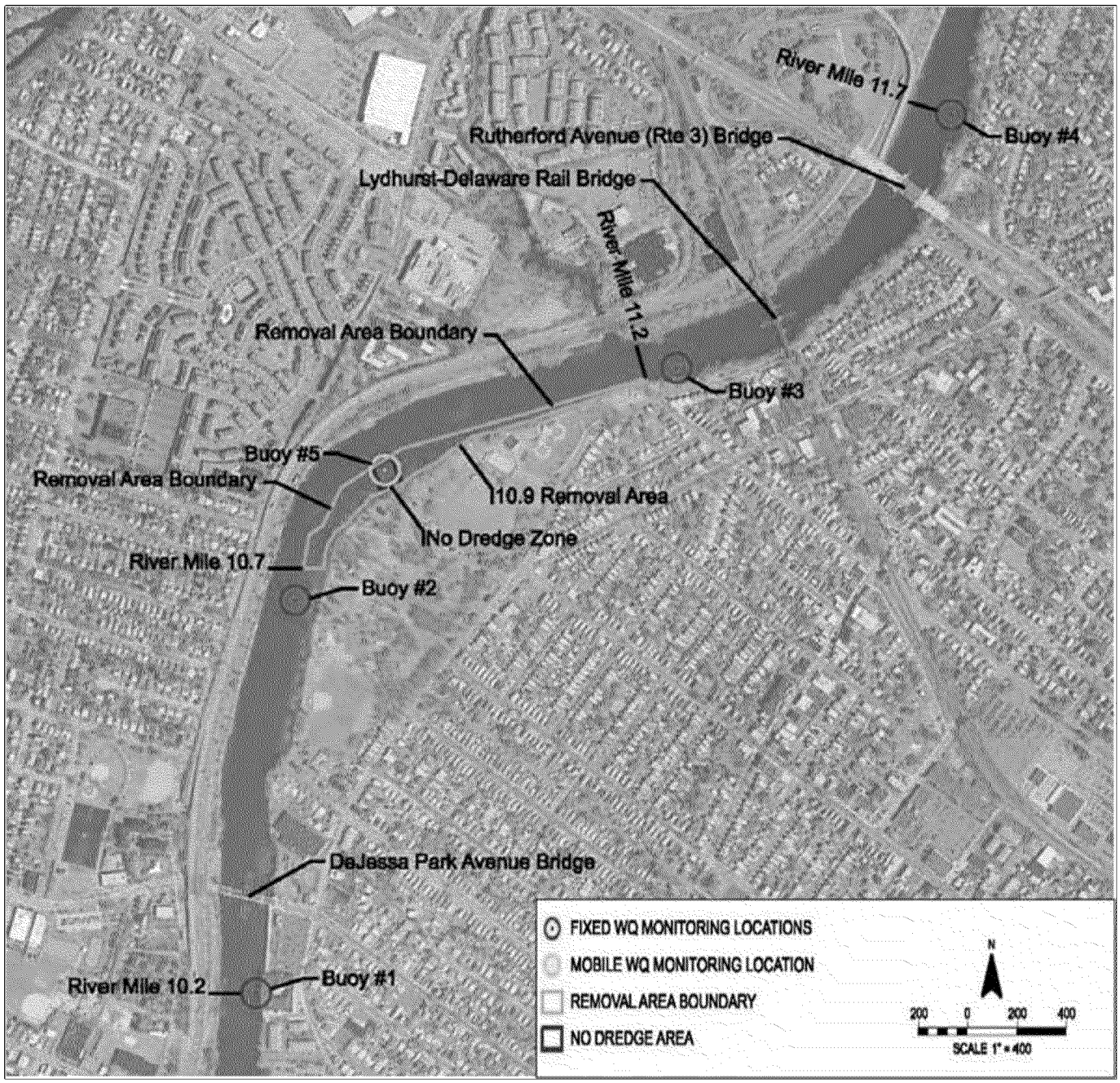

Water Quality Monitoring Locations

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